

Title (en)
MULTI-BAND CELLULAR ANTENNA SYSTEM

Title (de)
ZELLULARES MEHRBANDANTENNENSYSYSTEM

Title (fr)
SYSTÈME D'ANTENNE CELLULAIRE MULTIBANDE

Publication
EP 3791442 A4 20220209 (EN)

Application
EP 19800646 A 20190510

Priority
• US 201862670488 P 20180511
• US 2019031846 W 20190510

Abstract (en)
[origin: US2019349783A1] An antenna system may include a first phase shifting network to output a first set of component signals from a first component signal having a first frequency, a second phase shifting network to output a second set of component signals from a second component signal having a second frequency, the first frequency being less than the second, and an antenna array, the first phase shifting network to impart a first tilt angle for the first set of component signals, the second phase shifting network to impart a second tilt angle for the second set of component signals, and a single variable electrical tilt controller to control the first and second phase shifting networks and being configured to maintain a ratio between the first tilt angle and the second tilt angle, where the first tilt angle is greater than the second tilt angle, and where the ratio is less than one.

IPC 8 full level
H04B 7/06 (2006.01); **H01Q 3/00** (2006.01); **H01Q 3/26** (2006.01); **H01Q 3/30** (2006.01); **H01Q 3/34** (2006.01); **H01Q 3/36** (2006.01); **H01Q 5/00** (2015.01); **H01Q 5/30** (2015.01); **H01Q 5/50** (2015.01); **H01Q 21/22** (2006.01); **H01Q 25/00** (2006.01); **H04W 24/02** (2009.01); **H01Q 1/24** (2006.01)

CPC (source: EP US)
H01Q 1/246 (2013.01 - US); **H01Q 3/38** (2013.01 - US); **H01Q 5/50** (2015.01 - EP US); **H01Q 21/0025** (2013.01 - US); **H01Q 21/22** (2013.01 - EP US); **H04B 7/0617** (2013.01 - EP); **H04W 16/28** (2013.01 - US); **H01Q 1/246** (2013.01 - EP)

Citation (search report)
• [X] WO 2015006676 A1 20150115 - ANDREW LLC [US]
• [A] US 2013214973 A1 20130822 - VEIHL JONATHON C [US], et al
• See also references of WO 2019217906A1

Designated contracting state (EPC)
AL AT BE BG CH CY CZ DE DK EE ES FI FR GB GR HR HU IE IS IT LI LT LU LV MC MK MT NL NO PL PT RO RS SE SI SK SM TR

DOCDB simple family (publication)
US 10735978 B2 20200804; **US 2019349783 A1 20191114**; CN 112514163 A 20210316; CN 112514163 B 20220329; EP 3791442 A1 20210317; EP 3791442 A4 20220209; US 11197173 B2 20211207; US 2020344615 A1 20201029; WO 2019217906 A1 20191114

DOCDB simple family (application)
US 201916409532 A 20190510; CN 201980046004 A 20190510; EP 19800646 A 20190510; US 2019031846 W 20190510; US 202016924388 A 20200709